

# **How Passion Relates to Performance:**

## **A Study of Consultant Civil Engineers**

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**DISSERTATION.COM**



Boca Raton

*How Passion Relates to Performance:  
A Study of Consultant Civil Engineers*

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## **ABSTRACT**

Many company slogans and mantras profess that passion is part of the way they work and that it is important to them. Passion over the centuries has been defined as something that makes humans slaves to their emotions and exerts an almost overwhelming compulsion to participate in an activity or relationship. In a profession such as consultant civil engineering that is so strongly anchored in the objective and scientific, what place has a motivator such as passion?

This research takes a sample of consultant civil engineers and assesses two types of passion, harmonious passion and obsessive passion, and secondly measures their job performance. It was found amongst the engineers sampled that those who were more obsessively passionate achieved higher performance levels across the items measured and those who were more harmoniously passionate had little to no relationship with the performance items measured.

This suggests that obsessive passion has a relationship with various performance indicators related to consultant civil engineers and contributes to the knowledge gap of there being no research carried out with respect to passion and construction professionals.

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## **ABBREVIATIONS**

ANOVA = Analysis of Variance

ARPI = Industry or Company Awards and Recognitions, Performance Index

BS = Bonuses

DMP = Dualistic Model of Passion

ICAR = Industry or Company Awards and Recognitions

LPI = Career Level Performance Index

MANOVA = Multivariate Analysis of Variance

PR = Pay Rises

PRE = Positions of Responsibility

SDT = Self-Determination Theory

SPI = Salary Band Performance Index

# 1 INTRODUCTION

This chapter will introduce the research by giving an introduction to the theoretical background, making clear the aims and objectives, summarising the research methodology, discussing the limitations and scope of the research and finally, outlining what will be covered by the dissertation.

## 1.1 Background

*Passion makes idiots of the cleverest men, and makes the biggest idiots clever.*

(Francois de La Rochefoucauld, 1613-1680)

What is meant by the word “passion”? Over the centuries, amongst those keen to understand the human condition, the concept of passion has been a much studied, researched and debated topic. Throughout the professional world it is used abundantly in slogans, mantras and ideological company literature. For example:

*Your Potential: Our Passion – Microsoft (2010);*

*Developing a Passion for design – Arup (2010); and*

*Architecture, construction & surveying: Our Passion – Robert Gordon University (2010).*

It may be used to embody a number of different emotions but where does it come from and precisely what does it suggest about its subject?

The word itself comes from early Latin roots and suggests a sense of a human being acted upon by his/her emotions and also suggests that humans are passive to the persuasions that their emotions exert upon them. There are various philosophical arguments that deal with the concept of one’s passion. The principal two perspectives are 1) we should strive to completely numb our passions and only listen to reason and 2) we are unable to disregard our passions as they are what make us human and our sense of reason emerges only as a result of our passions. Whichever theory one holds to, it is evident that the concept of passion holds connotations of enthusiasm, of strong emotions and the manifestation of deep humanistic attributes.

The second train of thought and a more modern enquiry is that of passion and its manifestations as a psychological construct. From its usage in the slogans above it seems to suggest a positive motivational characteristic and it is implied that passionate people should be the cause, and recipients of, positive outcomes as a result of their passion. Professor Robert J. Vallerand from the University of Quebec and Montreal has done extensive work into defining passion as a modern psychological construct. He has developed what is titled the Dualistic Model of Passion (Vallerand 2010). This theory posits that passion may be split into two types; harmonious passion and obsessive passion. People develop different types of passion toward their activity due to the benefits it holds for them and how the individual subsequently internalises the activity as a passion.

Due to the author's experience as a consultant civil engineer, the second aspect of this research deals with consultant civil engineers (it is recognised that the term 'civil engineer' refers to all engineers involved with obvious construction disciplines such as civil, structural, highways etc, and the term 'consultant' refers to engineers involved in the design and supervision of construction works and based primarily in an office). The word 'engineer', like 'passion' finds its roots in Latin and has connotations of creating something intelligently (Harper 2010).

The discipline of engineering has its roots in the sciences, therefore to understand what it means to be an engineer, one must understand what it is to be scientific. It is commonly accepted that a scientific approach is defined as follows (Stephens 2007):

1. observation;
2. statement of a problem or question;
3. formulation of a hypothesis, or a possible answer to the problem or question;
4. testing of the hypothesis with an experiment;
5. analysis of the experiment's results;
6. interpretation of the data and formulation of a conclusion; and
7. publication of the findings.

Engineering must be executed in a scientific and objective manner and must be based on solid and well defined theory.

There are many successful examples in history of different types of engineers. From ancient Egypt there is Imhotep, responsible for some of the first pyramids built and who was ultimately raised to the level of a minor deity owing to his contribution to society. There is the fiercely passionate Francis Crowe, the man who oversaw the building of the Hoover Dam and who was known for his die-hard commitment to the trade, and finally there is Thomas Telford, responsible for the most prominent infrastructure projects of his time but also known for his excellent character and bright nature. All these men were huge successes in everything they put their skills to and performed at consistently high levels throughout their careers. Does this mean that they were truly passionate, and was this passion a help or hindrance to their performance?

In a profession that prides itself on the scientific and the objective, what place has such a controversial motivator such as passion amongst engineers? Is it a trait that is common to or consistently found in engineers and if so, what difference does it make in terms of engineering performance?

## **1.2 Aim and Objectives**

Much work has been done to assess passion and how it relates to several different professions and psychological areas of interest including teaching, music, sporting performance and gambling addictions (Vallerand 2010). Very little attention has been given to the study of passion and how it relates to professionals in the construction industry. In light of the two main topics presented above, this research aims to make a contribution to the knowledge gap; passion with regard to construction professionals. The contribution to this knowledge gap will be to test consultant civil engineers and assess levels of passion and levels of professional performance and ascertain if there are any patterns or relationships between the two concepts.

In order to achieve this, the project is split into four objectives (it is interesting to note the similarities between the research objectives and the scientific approach guidelines as listed above):

1. Research into relevant theory in order to understand the specified subject, identify and validate the knowledge contribution, and develop the research hypothesis.
2. Conduct field research in respect of the planned contribution to the identified knowledge gap.
3. Analyse the acquired field data in respect of the research hypothesis.
4. Comment on the significance of the retrieved information with respect to the subject and the knowledge gap, reject or confirm the research hypothesis and suggest recommendations for further research.

It is hypothesised that a significant relationship can be found to exist between the passion of consultant civil engineers and the performance of consultant civil engineers. These objectives have been developed as a way to properly test this hypothesis and ultimately either prove it or prove the null hypothesis. The null hypothesis in this research states that the performance of consultant engineers is completely unrelated to how passionate they are towards their job.

### **1.3 Limitations and Scope**

The extent or scope of this research is to research passion levels and performance in a sample of consultant engineers from the UK and Australia. This is achieved by extensive theory research and subsequently using appropriate methods of field research to properly assess the specified areas of interest and subsequently analyse and draw conclusions from the data.

It is recognised that the research is subject to a number of limitations; some of these are as follows (note that this list is not exhaustive and other limitations that have not been identified may apply):

- This research is limited to consultant civil engineers. In construction there are various other engineers involved for example, mechanical and electrical engineers, site engineers and hydraulics engineers, to name but a few. Any patterns and trends may only be discussed in relation to consultant civil engineers.
- A key limitation in this research is access to data. Engineers are very busy individuals and it is extremely difficult to encourage them to complete a survey without being able to offer much in the way of incentives.
- Owing to the research using an online survey, the author suspects that a number of the respondents didn't take the exercise entirely seriously and so the results may not be as accurate as they could have been.
- The author is not a professional psychologist. Although a great amount of effort was put into ascertaining solid psychological theory and understanding relevant procedures, there may be failings to some degree due to the author's lack of experience in the field.
- Concurrent to the last point, the author is not a statistics expert and so the data analysis was carried out in relation to the best analysis techniques that could be deduced, however it is quite possible that better analyses of the data could be carried out by someone with a deeper knowledge of psychological statistics.
- The measures that were assessed for performance were selected due to them being items that could be measured within the scope of the research. There are of course, many other items that could be measured to assess performance of engineers but this research is limited to salary band, career level, positions of responsibility, pay rises received, bonuses received and industry or company awards and recognitions received.

## **1.4 Research Methodology**

This research is observational and as such does not contain any manipulated variables. Also it is not feasible to ascertain statistical information about the whole population of consultant civil engineers and therefore the research is classed as non-experimental and non-probabilistic.

In order to measure the desired traits of passion and performance, research was required to find suitable instruments of assessment. Vallerand (2010) has developed a scale for assessing the two different types of passion and, performance was assessed using six items of measurement; salary band, career level, positions of responsibility, pay rises received, bonuses received and industry or company awards and recognitions received.

The research took a sample of consultant civil engineers using a number of sampling techniques i.e. snowball and convenience. The engineers selected fell into the following two categories; 1) engineers the author had previously worked with and 2) engineers from companies local to The University of Leeds. The survey was an online questionnaire that was distributed by email. The collected answers to the survey were subsequently analysed and assessed in line with established statistical analysis techniques and the results of these tests discussed in the context of the research hypothesis, the research objectives and the identified knowledge gap.

## **1.5 Dissertation Outline**

This dissertation consists of the following: research into the theory and concepts of the main subjects, definition of the knowledge gap and planned contribution, a discussion of methodology of how the data was obtained for this contribution, analysis of the results of the field research followed by a discussion of the implications of the retrieved data. Finally it will conclude with a summary of what has been found, what could have been done differently and recommendations for future research in this area.

## 2 THEORY RESEARCH

Objective 1 (refer to Chapter 1) is to ‘research into relevant theory in order to understand the specified subject, identify and validate the knowledge contribution, and develop the research hypothesis’. To fulfil Objective 1, the author carried out research into the respective subjects of passion and the nature of consultant civil engineers. This chapter constitutes a discussion of the author’s research into these two areas of concern followed by a discussion of relevant work already done in relation to the two subjects combined. It will subsequently clarify the aim of this research, its contribution to the identified knowledge gap (this will become progressively clear) and will make explicit the research hypothesis.

### 2.1 Passion

What is meant by the word ‘passion’? It holds connotations of enthusiasm, of strong emotions and the manifestation of deep humanistic attributes. Throughout the professional world it is used abundantly in slogans, mantras and ideological company literature. For example:

*Your Potential: Our Passion – Microsoft (2010);*

*Developing a Passion for design – Arup (2010); and*

*Architecture, construction & surveying: Our Passion – Robert Gordon University (2010).*

It may be used to embody a number of different concepts, i.e physical passion, passion for an activity etc, but where does it come from and precisely what does it suggest about its subject?

#### 2.1.1 ‘Passion’

In order to understand what is implied by the word ‘passion’, it is sensible to begin with an etymologic review. The most likely root for the word is the Classical Latin (the language of ancient Rome used until approximately 4<sup>th</sup> Century AD) *Patī*, meaning to suffer or endure. There is similarly implied a sense of being acted upon; thus the word passive is derived from the same root. In Late Latin (the literary Latin used between

3<sup>rd</sup> and 7<sup>th</sup> Century AD) is used the adjective *Passionem*, meaning suffering or enduring. It is argued that the word also has roots in the Proto-Indo-European base (the hypothetical reconstructed ancestral language of the Indo-European family which is estimated to have been in use around 3500 BC), *pei* meaning to hurt or the Greek *pema* meaning suffering, misery or woe.

In its more modern form, it is used primarily in Old French and Medieval English literature from around 12<sup>th</sup> Century AD. It refers predominantly to the 'sufferings of Jesus Christ on the Cross' (The Oxford English Dictionary 1989) and as such is found even in the earliest English translation of The Bible, for example:

*to whiche he schewide hym silf `alyue aftir his **passioun**, by many argumentis, apperinge to hem fourti daies, and spekinge of the rewme of God (Acts 1:3 Baber and Wycliffe Version).*

Wider usage of the word over the following centuries saw its meaning develop to suggest the strength of feeling associated with ultimate suffering. This is evident in the 1380's in Chaucer's *'Troilus and Criseyde'* (2008, line 704, Book 4), and in the 1590's in Shakespeare's *'Henry VI'* (Shakespeare 2006). Definitions to this effect are given in The Oxford English Dictionary (1989) which states, 'Any kind of feeling by which the mind is powerfully affected or moved; a vehement, commanding, or overpowering emotion' and secondly, 'Commanding, vehement or overpowering feeling or emotion'.

A further meaning to the word passion is described in the Collins Dictionary (2003) as, 'ardent love or affection' and 'intense sexual love'. This was first developed through the work of poets and playwrights of the 16th Century. In Shakespeare's *Titus and Andronicus* (Act 2) the character Chiron states, 'and that my sword upon thee shall approve, and plead my passions for Lauinia's love' and secondly, taken from *Romeo and Juliet* (Act 2) is 'To meet her new-beloved anywhere: But passion lends them power, time means, to meet' (Shakespeare 2006). Other early prominent writers to use the word 'passion' in this sense include Edmund Spenser's *'The Faerie Queene'* from 1590 and Edward Phillips *'The New World of English Words'* from 1658.

### 2.1.2 Passion in Philosophy

The philosophical debate over the role played by emotions and passions is still very much active today. Grayling (1998) states that 'The aim of philosophical inquiry is to gain insight into questions about knowledge, truth, reason, reality, meaning, mind, and value' and furthermore Solomon (1993) suggests that the enquiries of philosophy may be summarised in the following four questions: 'Why are we doing this?', 'Why did this happen?', 'What is it worth?' and 'Who am I?'. The theories of passions and emotions apply directly when considering the answers to these questions and have been at the forefront of philosophical thinking throughout the ages.

According to the likes of Socrates, Plato and Aristotle, Augustine and Aquinas, Kant, Spinoza and Schopenhauer, it would appear that the primary function of philosophy is to develop powers of reasoning adequate to control the force of the passions (Solomon 1993). Wholesale Western philosophical thinking suggests we are but separated from the animal kingdom by our ability to reason or think objectively (some attribute this to an inborn inheritance from the divine). However, there are two very distinct perspectives that emerge with respect to the passions in Philosophy.

The first is in line with the etymological sense of a man being passive towards his physiological urges. Rony (1990, cited in Vallerand 2010) states that Plato suggested that reason moves people towards the divine where passion encourages a regression to an animalistic state. Spinoza further suggested that acceptable thoughts come from an individual's sense of reason where unacceptable thoughts originate from one's passions.

In line with this is the common theme throughout religion that the natural passions are detrimental to the soul or mind and should be controlled and subdued in order to achieve a higher level of existence or salvation. In the New Testament, St Paul offers the following:

*Sirs, why do ye these things? We also are men of like **passions** with you, and preach unto you that ye should turn from these vanities unto the living God, which made heaven, and earth, and the sea, and all things that are therein (Acts 14:15, King James Version).*

Finally, Sallust, a 4<sup>th</sup> Century Roman writer, is cited in Hooper (1979) as saying, 'No mortal man has ever served at the same time his passions and his best interests'.

The second perspective we have is from philosophers such as Aristotle (384 BC – 322 BC) and Renee Descartes (1596 – 1650). Descartes, hailed as the 'father of modern philosophy' (Albuquerque et al 2003), is famous for pioneering the doctrine of dualism; the theory of mind and body existing largely independently of each other. His most famously cited work on the topic of passion, published in 1650 is entitled *Les Passions de l'Ame* and was published just months before his death; this whilst serving as tutor/advisor to Queen Christina of Sweden (1632 – 1654). Descartes suggested the concept of 'animal spirits' being the principle source of the passions (Smith 1952). This is to say that humans and animals alike have a force of nature within them which subjects them to various passions and in turn influences their behaviour. Descartes however was more of the opinion that the effect of external influences was not interpersonal but subjectively specific to the individual and dependant on the experiences of that individual. This is in contradiction to the Aristotelian commonplace which state that the passions are specified by their objects (Kenny 1970). Either way, both Aristotle and Descartes were of the persuasion that the passions are not a negative force to be kept separate from reason but generally quite positive provided reason underlies the subsequent behaviour (Vallerand 2010).

In support of this second perspective, Solomon (1993) disputes the theory that in order to be effective, reason must be separated from the emotions and states that 'the passionate life, not the dispassionate life of pure reason, is the meaningful life'. He suggests further that reason, in order to be valid, cannot ignore the passions and emotions as this is what makes us characteristically human.

Whether one holds to the philosophy that passions must be subdued, controlled and separated from reason or whether one feels (as Solomon posits) that passions are a fundamental part and the key to reason, it is evident that in human nature, passionate and emotional persuasions are unavoidable. In light of this, it is reasonable that the idea of practicing a science in a purely objective manner be questioned. In theory, a human may be able, through scientific reasoning, cross examination and overall sound

judgement, separate their field of analysis from subjective feelings and emotions. However, there will always be present in the psyche of the individual, characteristically human emotions and psychological needs which will to one extent or another, govern the way the individual operates.

### **2.1.3 Passion in Psychology**

Philosophy, as discussed above is a subjective and theoretical analysis of life and the human condition. Philosophical ideals and principals have been explored, reiterated and consolidated over time into a robust and academically rich subject. Solomon (1993) argues that the very essence of philosophy however, should be in the simplistic and barely articulate questions of 'why' and should be explored not just by the educated professional in the field but in the street (as did Socrates) by and for the benefit of common folk. In contrast, Psychology in layman's terms, is the field of exploration into the mind and the assessing of its functions in a scientific and objective way. It is a quantitative assessment of the psyche and is founded on scientific exploration into human behaviour.

It would seem, according to the mantras stated at the beginning of this chapter that in general, the term passion has been embraced in modern literature and thinking to be more closely aligned with the second philosophical avenue outlined above. Namely, to be passionate about something leads one to action in an upbeat and generally commendable fashion. In this sense then it can be assumed to be something of a positive nature in terms of its motivational characteristics. In summary, the individual is moved upon by the force of his emotions and encouraged to act due to various emotional engagements. This level of motivation due to emotional inclination is what has been studied in great detail by the Canadian Psychologist Robert Vallerand.

According to Vallerand (2010), despite the extensive coverage from the world of Philosophy over the centuries, Passion as a psychological construct has received very little attention with respect to its behavioural outcomes and its psychological processes. Only up until relatively recently has the interest of passion with regards to its motivational application come to the forefront of psychological interest. Frijda et al. (1991, cited in Vallerand 2010) states that 'passions are defined as high-priority

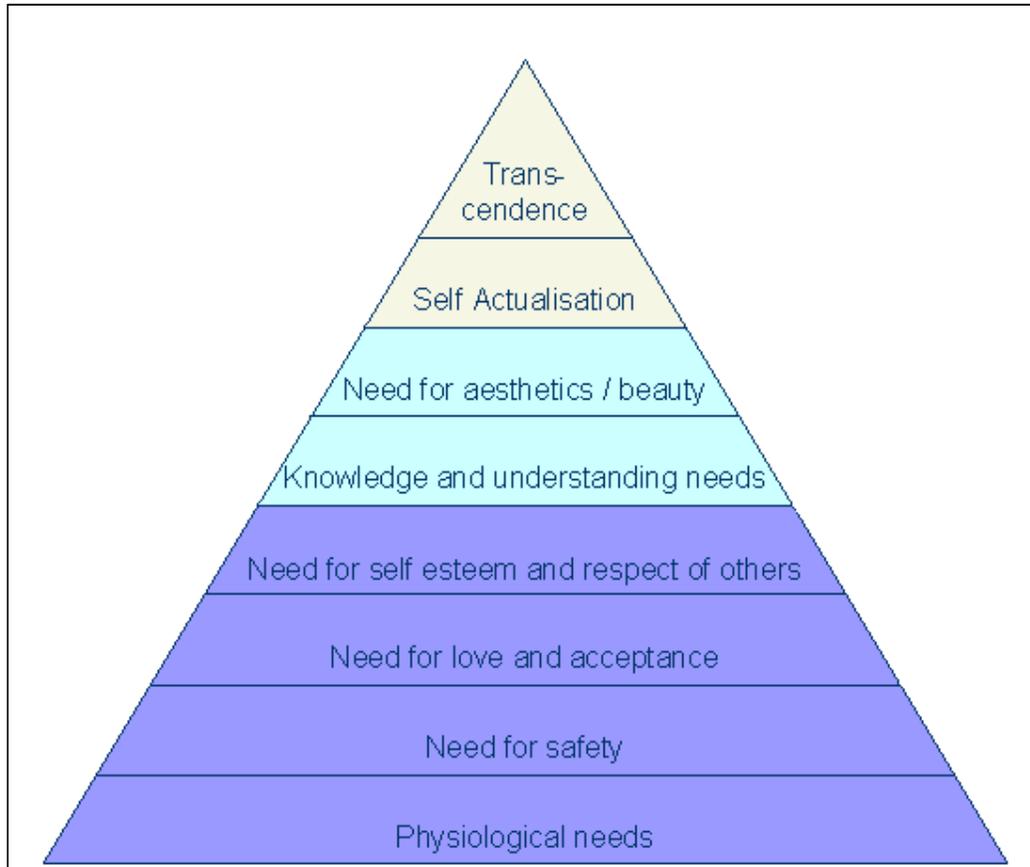
goals with emotionally important outcomes' and underscores the motivational qualities of passions. According to Vallerand, the majority of research and focus on the passion construct in psychology has focused on passionate love with some focus towards the parallel concept of addictions. He explains however that this concept has been 'largely atheoretical' with 'no empirical research' carried out. He states the following with regard to previous research:

*The concept of passion is [...] related to other psychological concepts such as flow, talent-related activities, well-developed interests and commitment. However, these constructs do not present a nuanced perspective on processes leading to both adaptive and maladaptive outcome that are inherent in the duality of passion (Vallerand 2010 pg. 105).*

The concept of passion then seems to have allusions toward motivation. Motivation has been a relatively well studied topic, particularly over the last century. It is interesting to see how established theories of motivation are relevant to the more recently developed theories of passion.

#### **2.1.4 Motivation**

Motivational theory in a psychological sense has gone through a fairly recent evolution of theories. Maslow (1943) proposes that people are motivated by categorical needs. These he discusses as a hierarchy as shown in Figure 2.1 signifying that in order to be properly motivated for the higher needs, the lower needs must have been satisfied. The lowest need level is physiological needs; this means that the first and most important need that humans will want to satisfy are the physical essentials e.g. water, food and warmth. The hierarchy suggests then that if these basic needs are not met, humans will exert all their physical and mental resources into satisfying them before the higher needs can be addressed. Consider a person marooned on an uninhabited island with no possessions. The first task will be to find a water source, food and possibly a way to keep warm (physiological needs). Once these needs are satisfied, they will progress to finding a way of keeping themselves out of the storms and away from dangerous animals; possibly some kind of dwelling (need for safety). Next they will be able to turn their attention to finding other people (need for love and acceptance) and so on and so forth.



*Figure 2.1 – Maslow's Hierarchy of Needs [Source: Droars 2010]*

Building on the needs theory, Herzberg proposes that some needs are not necessarily motivators but can be de-motivators if not fulfilled; these are known as hygiene factors. His 'Two Factor Theory' was developed from a study of accountants and engineers and the needs assessed are summarised as follows (Herzberg et al. 1959 cited in King 1970).

- Motivators – achievement, recognition, work itself, responsibility, advancement and possibility of growth.
- Hygiene Factors – salary, interpersonal relations, status, interpersonal relations, supervision, company policy & administration, working conditions, personal life, job security.

Thirdly, McClelland (1987) categorises these needs into the following three areas; again this is considering vocational motivation.

- The need for achievement;
- The need for authority and power; and
- The need for affiliation.

He posits that no individual belongs entirely to one specific category but will show bias to a particular one and this determines how the person is motivated. For example, if a manager shows a strong bias to the affiliation need he/she will be less effective as a manager as he/she will most likely be motivated by his/her desire to be liked or make friends amongst colleagues and subordinates.

The second avenue of motivational theory is centred on outcome based theories; the most important of these being the 'Expectancy Theory' by Victor Vroom (cited in Smith & Hitt 2005, Chapter 12). The Expectancy Theory consists of three variables.

- Valence – how important a person feels the outcome of an action is;
- Instrumentality – this is the strength of the belief that the activity will lead to the outcome of the next; and
- Expectancy – this is the belief that higher level of performance will facilitate a high outcome.

The two stages of consideration in expectancy theory are effort - performance expectancy followed by performance - outcome expectancy (See Figure 2.2). This is an important view on motivation in that it defines the mind process involved through the stages of motivation and not solely the original catalyst as with needs based theories.